

Remarks

The above Amendments and these Remarks are in reply to the Office Action mailed March 21, 2005.

Claims 71-77 are currently pending and stand rejected under 35 U.S.C. §103 as obvious over U.S. Patent No: 5,283,378 (the "378" patent). Applicants respectfully traverse the rejection and submits that no valid prima facie case for obviousness has been made.

I. No Sufficient Motive to Modify the '378 Reference Has Been Provided

The Manual of Patent Examining Procedures (MPEP), Section 2141 states in part:

When applying 35 U.S.C. §103, the following tenets of patent law must be adhered to:

(B) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination." Emphasis added.

Section 2141.02 states in part:

A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention;" emphasis in original.

MPEP Section 2143.01 states:

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.... Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so.

II. Purposes of the '378 and Applicants' Invention Are Different and Incompatible

The '378 patent is directed at methods for reducing the amounts of chlorine and bromine in fluorine containing aromatic compounds. "The present invention relates to an industrially particularly advantageous and selective process for the dechlorination and/or debromination of fluorine- and chlorine- and/or bromine-containing compounds." Column 1, lines 9-13.

The '378 patent describes the prior art as follows: "It is known that aromatic compounds containing at least three fluorine atoms can be obtained by treating an aromatic compound containing at least three fluorine atoms and at least a further non-fluorine halogen atom..." Additionally, "In all of these processes, the obtainable yield and selectivity of dechlorinated products is still unsatisfactory." Column 1, lines 38-40. Thus, the aim of the '378 patent is to develop improved methods for removing chlorine and/or bromine from aromatic compounds containing fluorine.

To solve the stated problems, the '378 patent describes "a process for the selective dechlorination and/or debromination of fluorine- and chlorine- and/or bromine-containing aromatic compounds with hydrogen in the presence of catalysts has now been found..." Column 1, lines 40-43; emphasis added.

In contrast, Applicants' compounds are used for forming polymers useful in manufacturing. As used in this REPLY, reference will be made to paragraph numbers of the published application No US 2004/0234779 A1. For example, "one objective of this invention is to develop novel dielectric thin films for integrated circuit manufacture." Page 3, paragraph 0047 of the published application. Additionally, "aromatic hydrocarbons are selected to provide lower dielectric constant, high thermal stability, and high mechanical stability, thereby providing barrier and lower dielectric layer functions." Paragraph 0061.

Thus, Applicants submit that the problem to be solved by the '378 patent is so different from that of the instant application as to be incompatible with the purposes of the Applicants' invention.

III. No Motive Has Been Provided to Eliminate a Large Number of Possible Species of the '378 Patent

Additionally, the '378 patent discloses numerous species that are not claimed and would not be suitable for forming a polymer having low dielectric constant, high thermal stability and high mechanical strength. In fact, the Examiner stated: "Bielefeldt et. al. do not specifically disclose any particular species as recited in the claims of the instant application." Office Action, page 3. Moreover, the '378 patent does not disclose any use of the disclosed compounds either for low dielectric constant, high thermal stability or high mechanical stability.

The '378 patent discloses at least 3 functional groups associated with an aromatic moiety, (1) (X)_n, (Hal)_l, and (Rf)_m, where (Hal)_l can be 1, 2, 3, or 4 Cl- or Br- groups. "(Rf)_m ... represent[s] fluorine or a fluorine-containing radical having 1 to 4 C atoms and 1 to 6 fluorine atoms." Further, "(X)_n represents C1- to C4-alkyl, fluorinated C1- to C4-alkyl, C1- to C4-alkoxy, CHO, CH₂OH, CN, COO-C1- to C4-alkyl, NH₂, CH₂NH₂ or NO₂." Column 1 line 62 bridging to Column 2, line 3.

Thus, the '378 patent discloses a very large number of potential positions on the Ar moiety that can have leaving groups (e.g., 5 or more), whereas the instant application claims compounds having only a small number of leaving groups (2 or 3). Moreover, the '378 patent discloses a very large number of functional groups appended to the Ar group (i.e., (Rf)_m and (X)_n) that are not a single methylene group (i.e. CH₂-) or a fluorinated methylene group (CF₂-) as claimed. In particular, the instant claims do not include "fluorine-

containing radicals" having more than 2, 3 or 4 carbon atom, as disclosed in the '378 patent. Similarly, the (X)_n substituent can be C1- to C-4 alkyl ..." as disclosed in Column 2, lines 1-3. Thus, there are potentially a very large number of substituents represented by (Rf)_m and (X)_n that are missing from the instant claims. The fact that (X)_n can be 0 and (Rf)_m can be fluorine atoms means that there is a possibility of a compound of the '378 patent having most of the features of compounds of the instant claims, but not all of those features (i.e., two leaving groups).

Thus, applicants submit that there is no teaching or suggestion to modify the compounds of the '378 patent in such a way as to arrive at the Applicant's invention. Even if one could modify the compounds of the '378 patent, without a motivation to do so, no prima facie case for obviousness has been made.

Furthermore, Applicants respectfully submit that there is no teaching or suggestion in either the '378 patent or anywhere else that the Examiner has identified that would motivate a person of skill in the art to select those particular leaving groups of the instant claims.

IV. The '378 Patent Teaches Away from Applicants' Claims

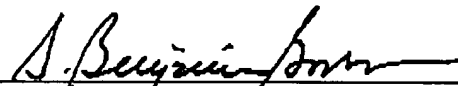
Applicants submit that the '378 application teaches away from the instant claims because by replacing a leaving group (e.g., Cl- or Br-) with hydrogen (H) will not produce an intermediate that can form a polymer as claimed. Rather, with all of the available bonds occupied by either F-, Cl-, Br- or H, the compounds of the '378 application have no available open bonds through which to form a polymer. Thus, the compounds disclosed in the '378 patent would be unsuitable for the purpose for which Applicants have designed the claimed precursors.

Thus, Applicants submit that the '378 application either (1) teaches away from the instant claims or (2) provides no motive to eliminate a large number of species from the '378 patent to arrive at Applicants' invention as claimed.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 06-1325 for any matter in connection with this response, including any fee for extension of time, which may be required.

Respectfully submitted,

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